

Eulachon subsistence use and ecology investigations 2000-2002

Abstract: The subsistence use and ecology of eulachon (*Thaleichthys pacificus*) was studied at Twentymile River, a tributary of Turnagain Arm located in southcentral Alaska from 2000 to 2002. Harvest in 2002 was estimated at 14,940 kg with fishermen representing both rural (9%) and non-rural (91%) communities. A baseline larval monitoring program to index adult population strength was designed and implemented successfully on the Twentymile River. To aid managers in development of future monitoring programs on Twentymile and other rivers, we investigated the environmental factors associated with the migration of adult eulachon and downstream drift of larval eulachon. We assessed run timing, freshwater duration, length, weight, age, presence or absence of teeth, fecundity, and gear selectivity for dip and gill nets. Catch per unit effort of migrating adult fish was correlated with water temperature, tide height, river discharge, light intensity, and the density of bald eagles (*Haliaeetus leucocephalus*). Water temperature, river discharge, tide height, and light intensity were related to downstream drift of larvae. Radio telemetry was used effectively to study the migration movements of adult eulachon and to determine possible spawning areas. Clusters of the upstream limits of migration identified four common spawning areas in two consecutive years.

Citation: Spangler, E. K., R. E. Spangler, and B. L. Norcross. 2003. Eulachon subsistence use and ecology investigations 2000-2002. U. S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring program, Final Report, (Study No. 00-041). U. S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring program, Anchorage, Alaska.